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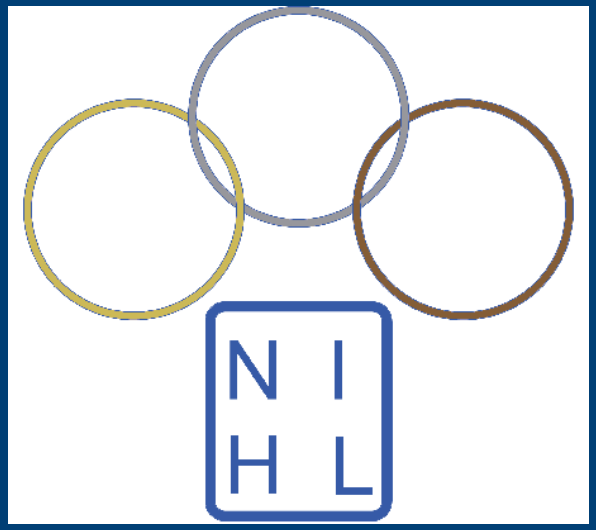


Web Applications for the Northern IL Hockey League

NIHL

The Northern Illinois Hockey League is the largest youth hockey league in Illinois, serving over 300 youth teams and over 4,000 players

Problem

NIHL PROBLEMS

- 3,500 games are played each season with a hand scheduled matchmaking system
- Their score reporting system requires over 200 team managers to fax completed game reports to a outsourced league statistician
- An elaborate manual process for the various hockey divisions to establish their schedules and locations for the seeding round games every year

TEAM STRUCTURE

Documentation and Testing

- Christopher Savage
- Kristin Lucchesi
- Kryzystof Bartus
- Colin Scheer

Coding Team

- Vladimir Semenov
- William Perkins
- Julian Hays
- Dustin Barksdale
- Mantas Vidutis

OBJECTIVES

- Research NIHL's current scheduling and scoring process
- Develop web-based scheduling and scoring applications that can support its annual operations
- Test and debug the web-based applications
- Integrate our application onto their existing site
- Create a user manual for the users of our applications

PROJECT APPROACH

Phase I: Research & Design

- Study and evaluate NIHL's current scheduling and matchmaking process
- Create the site map and logic algorithms for our applications

Phase II: Development

- Code the application as well as make the user manual and help sections

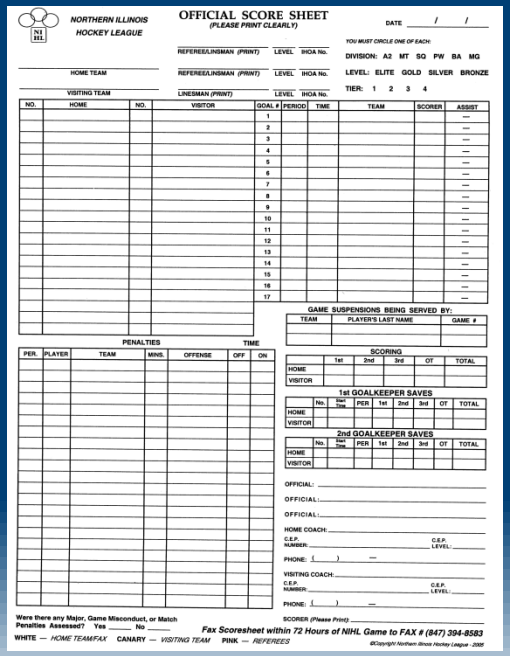
Phase III: Testing & Refinement

- Input data and test algorithms of the application.
- Perform debugging

SOFTWARE DEVELOPMENT PROCESS

RESEARCH

- We personally observed NIHL's current matchmaking process



NORTHERN ILLINOIS HOCKEY LEAGUE

OFFICIAL SCORE SHEET
(PLEASE PRINT CLEARLY)

DATE ____ / ____ / ____

REFEREE/LINSMAN (PRINT) ____ LEVEL ____ IHOA No. ____

REFEREE/LINSMAN (PRINT) ____ LEVEL ____ IHOA No. ____

LINESMAN (PRINT) ____ LEVEL ____ IHOA No. ____

HOME TEAM ____

VISITING TEAM ____

YOU MUST CIRCLE ONE OF EACH:

DIVISION: A2 MT SQ PW BA MG

LEVEL: ELITE GOLD SILVER BRONZE

TIER: 1 2 3 4

NO.	HOME	NO.	VISITOR	GOAL #	PERIOD	TIME	TEAM	SCORER	ASSIST
				1					—
				2					—
				3					—
				4					—
				5					—
				6					—
				7					—
				8					—
				9					—
				10					—
				11					—
				12					—
				13					—
				14					—
				15					—
				16					—
				17					—

PENALTIES

PER.	PLAYER	TEAM	MINS.	OFFENSE	TIME OFF	TIME ON

GAME SUSPENSIONS BEING SERVED BY:

TEAM	PLAYER'S LAST NAME	GAME #

SCORING

	1st	2nd	3rd	OT	TOTAL
HOME					
VISITOR					

1st GOALKEEPER SAVES

	No.	Start Time	PER	1st	2nd	3rd	OT	TOTAL
HOME								
VISITOR								

2nd GOALKEEPER SAVES

	No.	Start Time	PER	1st	2nd	3rd	OT	TOTAL
HOME								
VISITOR								

OFFICIAL: ____

OFFICIAL: ____

OFFICIAL: ____

HOME COACH: ____

C.E.P. NUMBER: ____ C.E.P. LEVEL: ____

PHONE: (___) ___ ____

VISITING COACH: ____

C.E.P. NUMBER: ____ C.E.P. LEVEL: ____

PHONE: (___) ___ ____

SCORER (Please Print) ____

Were there any Major, Game Misconduct, or Match Penalties Assessed? Yes ____ No ____

Fax Scoresheet within 72 Hours of NIHL Game to FAX # (847) 394-8583

WHITE — HOME TEAM/FAX CANARY — VISITING TEAM PINK — REFEREES

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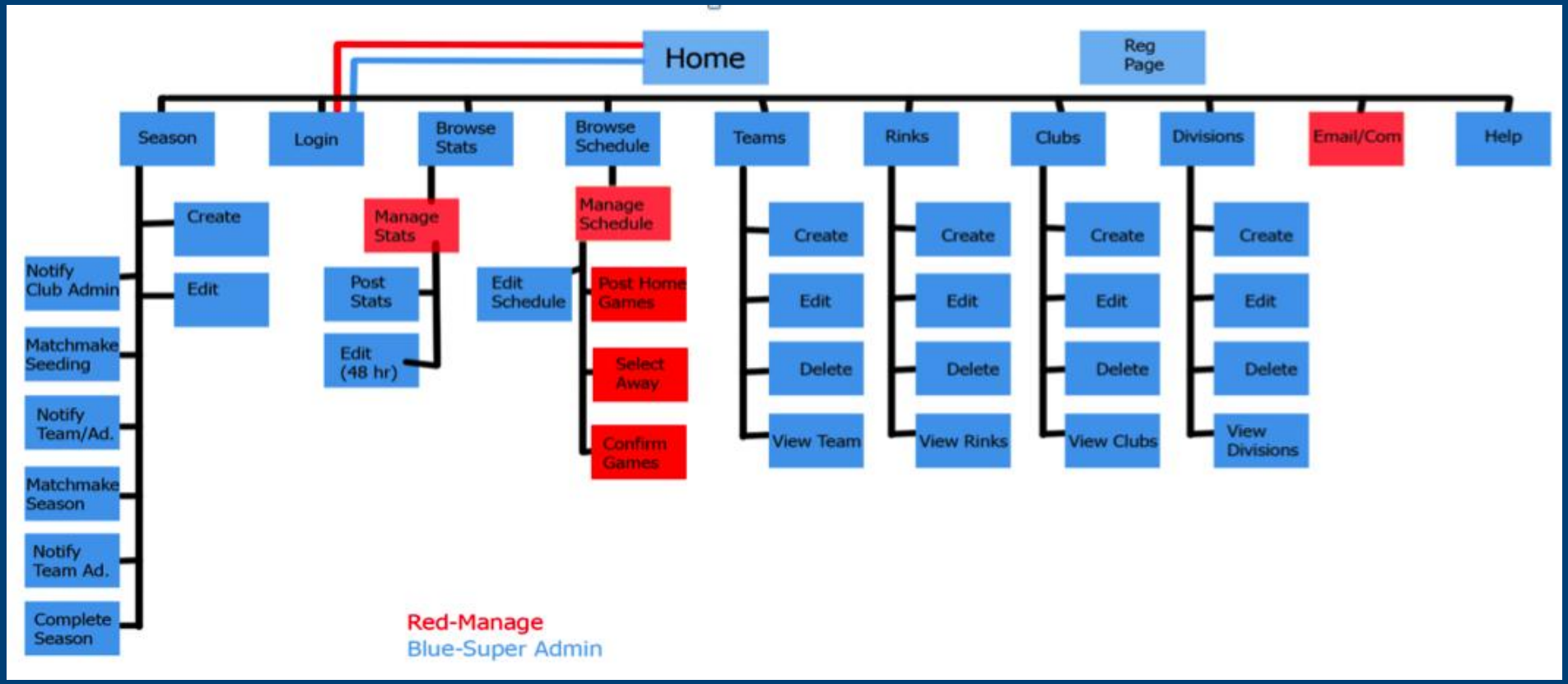
- We also analyzed NIHL's current statistics forms and regulations

DESIGN


Home
Reg Page
Season
Login
Browse Stats
Browse Schedule
Teams
Rinks
Clubs
Divisions
Email/Com
Help
Create
Edit
Notify Club Admin
Matchmake Seeding
Notify Team/Ad.
Matchmake Season
Notify Team Ad.
Complete Season
Manage Stats
Post Stats
Edit (48 hr)
Manage Schedule
Edit Schedule
Post Home Games
Select Away
Confirm Games
Create
Edit
Delete
View Team
Create
Edit
Delete
View Rinks
Create
Edit
Delete
View Clubs
Create
Edit
Delete
View Divisions
Red-Manage
Blue-Super Admin

MATCHMAKING ALGORITHM

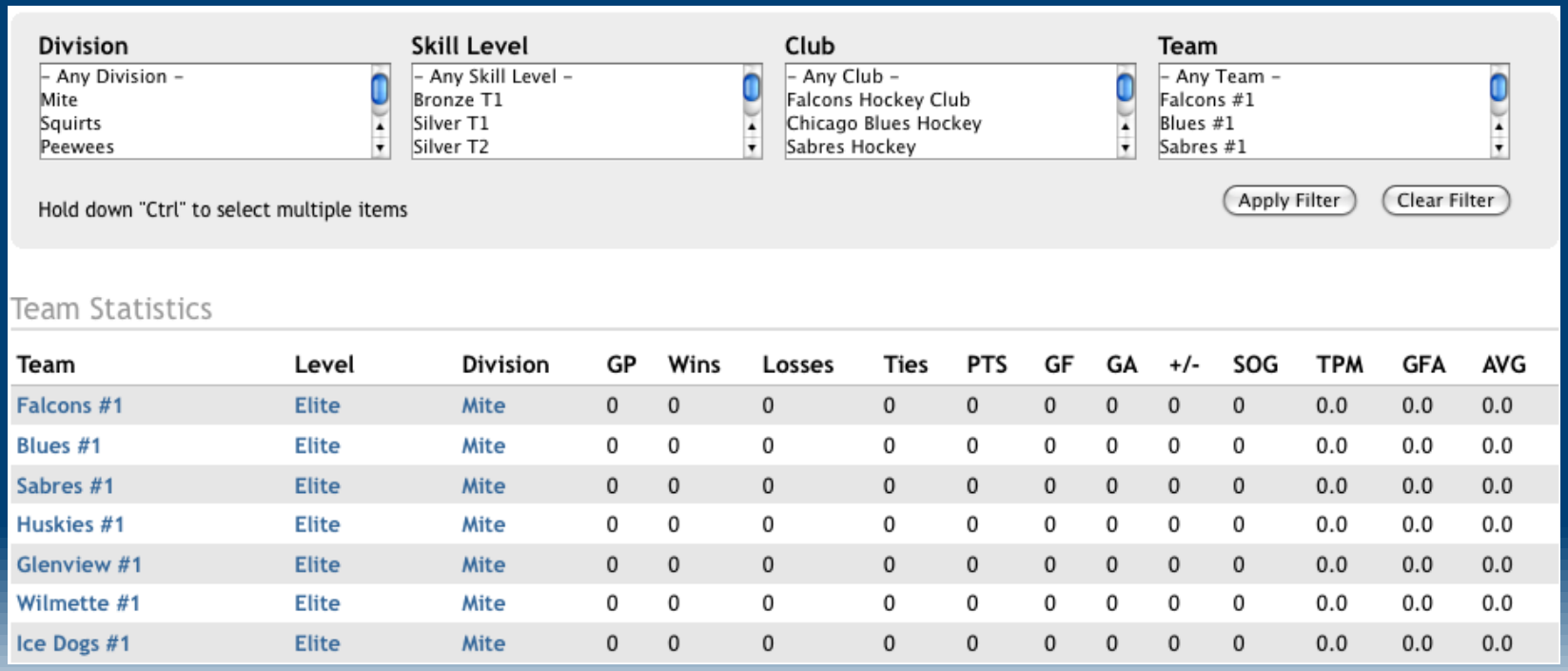
- Analyzes team listings and generates matches automatically

Seeding Matchups (2009 Season)

Home Team	Away Team	Status
[Mite Elite] Falcons #1	[Bantams Elite] Vikings #1	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Peewees Silver T2] Bruins #2	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Squirts Silver T2] Jets #2	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Mite Silver T2] Wilmette #3	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Mite Elite] Express #1	Confirmed for **12/25/2009 06:15 PM** at Cahokia Ice Rink.
[Mite Elite] Falcons #1	[Mite Silver T1] Bruins #1	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Mite Elite] Express #1	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Mite Silver T1] Bruins #1	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Mite Silver T2] Wilmette #3	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Peewees Silver T2] Bruins #2	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Bantams Elite] Vikings #1	Away team has not picked a date yet.
[Mite Elite] Falcons #1	[Squirts Silver T2] Jets #2	Away team has not picked a date yet.
[Mite Silver T1] Vikings #2	[Mite Elite] Falcons #1	Waiting for home rink schedule.
[Mite Silver T1] Vikings #2	[Mite Elite] Falcons #1	Waiting for home rink schedule.
[Mite Silver T2] Blues #2	[Mite Elite] Falcons #1	Waiting for home rink schedule.
[Mite Silver T2] Blues #2	[Mite Elite] Falcons #1	Waiting for home rink schedule.

STATISTICS

- Allows team managers to update statistics via a web browser



Division
- Any Division -
Mite
Squirts
Peewees

Skill Level
- Any Skill Level -
Bronze T1
Silver T1
Silver T2

Club
- Any Club -
Falcons Hockey Club
Chicago Blues Hockey
Sabres Hockey

Team
- Any Team -
Falcons #1
Blues #1
Sabres #1

Hold down "Ctrl" to select multiple items

Apply Filter | Clear Filter

Team Statistics

Team	Level	Division	GP	Wins	Losses	Ties	PTS	GF	GA	+/-	SOG	TPM	GFA	AVG
Falcons #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Blues #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Sabres #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Huskies #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Glenview #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Wilmette #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Ice Dogs #1	Elite	Mite	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0

TESTING & REFINEMENT

- Created test cases to cover all possible scenarios
- Executed test cases against final application version
- Re-executed test cases until all bugs have been eliminated

OBSTACLES

- Difficulties acquiring test data from NIHL
- Getting all the separate parts of the application to work together
- Making the interface intuitive and user friendly
- Not everyone had experience with development environment we used

ETHICAL CONSIDERATIONS

- Focused on developing the application specifically for NIHL and not a general sports league
- Ensured that none of the code, images or templates we used were copyrighted
- Made a secure system that can not be infiltrated
- Privacy concerns for all the children and adults associated with the NIHL

NEXT PHASE

- User acceptance testing
- Deployment to Production Environment

SITE DEMONSTRATION

- Example of scheduling a game and entering statistics

QUESTIONS?